GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, NOVEMBER 28, 1888.

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Injuries to Shade Trees.

THAT a well-formed, vigorous tree is worthy of respect and consideration, is a fact of which it is to be hoped no reader of GARDEN AND FOREST is either ignorant or unmindful. There is one point, however, to which public attention should be called, viz., to the danger arising from the removal of large branches of sound trees, either intentionally, by wholesale pruning, or by the violence of winds and storms, without proper subsequent care. If a branch is in the way, few persons now hesitate about cutting it off, no matter how large it is, and it is not a rare thing in our thickly-settled towns and their suburbs to see trees which have been reduced to two-thirds, or occasionally to one-half, their normal dimensions, by indiscriminate trimming. Or it may be that a superannuated family mansion has been sold for a few hundred dollars and removed to the outskirts of the town, to be transformed into a tenement-house which is to be made to pay several hundred per cent. to the shrewd purchaser. That is, perhaps, none of our business. But it does concern us if the house has to be dragged through a mile or two of streets, crashing and tearing off the branches of shade-trees on the way. Recently a three-hundred-dollar house did much more than three hundred dollars' damage to trees during its slow passage down the streets of a city, which need not be named.

In the first place, by such acts of violence, or even vandalism, the beauty of the trees is diminished, and they become not only unsightly, but also less valuable as shade trees. That is evident to every one. But the more serious evil of which I would speak is one which is not recognized at the time. The trees are not killed at once, to be sure, but the open wounds made by breaking or cutting off good-sized branches are just the places in which the spores of many destructive fungi lodge and grow. So long as the bark remains as a covering of the wood, such spores do not readily find an entrance to the wood itself. Of course, there are some fungi which destroy trees by entering the leaves or roots. But the fungi now referred to are rather certain toadstools, punk-fungi and their allies, which, while they do not grow upon the leaves and not usually on healthy roots, often attack open wounds where the wood, exposed to the action of the weather, becomes naturally somewhat rotten. Once established in such places, the mycelium of these fungi makes its way slowly but surely into the adjoining healthy wood, until, in comparatively few years, the whole tree becomes diseased. The mycelium is not annual but perennial, and bears, on the surface, repeated crops of toadstools or punk, as the case may be. Knowing this fact, one should hesitate before cutting off large branches, and so endangering the life of the tree itself. We know the dangers from open wounds in animals, and we must also recognize that they are dangerous in plants. If one wishes to be convinced of the truth of these statements, he has only to walk along the streets of any town in late summer, and notice how frequently toadstools and punk are growing on the scars where branches have been removed. If the wounds are of some years' standing, and have not been treated, as all wounds upon trees should be treated as soon as made, with a coating of coal-tar or paint, he will probably also find rotten spots on the trunks themselves, in which fungi are growing, which have developed from the mycelium that has penetrated into the trunks from the old scars.

In this connection one should notice the wounds caused by the bites of horses fastened to trees. In thickly settled regions this evil is a serious one, and householders should be compelled by law to place some protection around the parts of the trunks of trees on their sidewalks likely to be injured by horses. Oxford Street, in Cambridge, Massachusetts, affords a good illustration of the evil. For some distance the trees have been bitten by horses, and on the side of the trunks facing the street there are large wounds, which are not only unsightly, but which have also caused a disturbance of nutrition to such an extent that the trees are sickly, and, in some cases, apparently dying. The health of trees which are for the benefit of coming generations as well as our own should not be endangered by the carelessness of those who now live near them.

Uses are constantly found now for minor products of our forests which, until recently, were considered valueless. A conspicuous example of this fact is pine-fibre matting, which is manufactured, in North Carolina, from the leaves of the Long-leaved Pine (*Pinus palustris*). The industry is a new one, comparatively, but it has already become important, and it is likely to grow as the value of the matting made from Pine leaves is better known. A bagging material is also made in the same way, which can be used for covering cotton-bales. This fact is now creating much interest in the cotton-producing States, because the price of jute-bagging, which up to the present time has been the only material used for covering cotton-bales, has been enormously increased by the manipulation of a combination of importers who control the supply, and who have formed a jute-bagging trust. It is now believed that Pine-leaf bagging will prove the best substitute for jute. Should this expectation be confirmed, the production of this article may be expected to be very large in the course of the next few years.

The green Pine leaves, collected in the forest for the purpose, are purchased at the factories for fifteen cents the 100 pounds. They are first cleaned, and then placed in large iron cylinders set on end and surrounded with steam-pipes. They are then thoroughly steamed, the vapor being conveyed through pipes into an ordinary distillery-worm in an adjoining building. Pine-leaf oil, a valuable antiseptic, is obtained in this way at the rate of about one-half gallon for 100 pounds of leaves. The leaves are then boiled to remove the silica, which is found in their outer covering, and which can be used in tanning leather. The leaves are next boiled again and bleached, and are then ready to be dried, which is done in machines, by means of which all moisture is evaporated from them. The fibre is then ready for manufacture, and is put up in burlap bales weighing twenty-five pounds. The Pine-leaf

fibre has also been found valuable by surgeons in the treatment of fractures and in dressing wounds. It is an excellent disinfectant, and probably many other uses will be found for this long-neglected product of the forest.

From a note in the *English Mechanic and World of Science* it appears that the paper manufactured from the wood of the Red Cedar (*Juniperus Virginiana*) has been found useful for underlaying carpets and for wrapping wool, furs and other articles liable to be injured by moths, which are driven away by the peculiar odor of this wood. The wood from which this paper has been made has been the waste of pencil factories; but if it is found to possess the value which is attributed to it, the establishment of pulp mills in parts of this country where the Red Cedar abounds will, no doubt, prove an exceedingly profitable enterprise. The Red Cedar is the most widely distributed of North American trees. It is found growing, often in great abundance, from Canada to Texas, and from the shores of the Atlantic to those of the Pacific. In some parts of the country, especially in Florida, where the best pencil wood has been procured, and along the valley of the Red River in Texas, it grows to a large size, with tall, straight trunks, which yield straight-grained lumber of high quality. More often the trunks of the trees are short, often contorted and filled with knots, and, therefore, unfit to manufacture into lumber, and up to this time have been of very little value, except for fence-posts and inferior railway-ties. If Cedar paper, however, is really valuable, the trees which have been considered worthless can be profitably utilized. In the central and in the eastern parts of the States of Kentucky and Tennessee there are hundreds of square miles of rocky and sterile soil—Barrens, as these lands are known locally—covered almost entirely with Red Cedars, which, if they can be profitably manufactured into paper-pulp for this special purpose, will give a much greater value to these lands than they have ever been suspected of possessing.

Newport.—I.

I THINK the first thing that strikes a foreign visitor to Newport must be the singular way in which evidence of lavish expenditure mingles with signs of an almost pauper disregard for appearances. Such contrasts often reveal themselves in America, but seldom so forcibly as here. The town to which the great colony of costly and ambitious summer villas is attached, is much less neatly kept than is the rule in New England, and certain of its outlying streets—constantly traversed by pleasure-seekers in gorgeous equipages—are a veritable offense to the eye. At one step we pass from little palaces, surrounded by exquisitely kept grounds, almost into "Shantytown" itself. Nor are striking signs of carelessness absent, even though we keep strictly within the villa districts. Even on Bellevue Avenue the borders of the road are left untended to a degree which, in Lenox, for example, would not be tolerated for a week; and where a vacant lot occurs, its fence is a tumble-down, weed-grown affair, that a respectable farmer in a rough country village might blush to own. I have heard it said that Newport, despite its claims to art and taste, to elegance and fashion, is, as a whole, a vulgar-looking place. The term is too harsh, yet there is some excuse for its application. In many places we seem to read a regard for what is visibly one's own combined with a disregard for what is everybody's; a love of display united to a lack of public spirit, which should certainly not characterize a refined community.

The best part of Newport is the beautiful Cliff Walk, which runs for more than three miles on the edge of the lifted rocky shore, passing villa after villa set back beyond verdant lawns. An old public right of way has most fortunately kept this walk open and free, although the land all belongs to the villa-owners; and the appearance of brotherly concord between neighbor and neighbor and generosity towards the public, which it seems to reveal, added to its intrinsic charms, has made it a frequent theme for praise with foreign writers on landscape gardening and the arrangement of country towns. Here, at least, no signs of carelessness appear. The soil along the cliffs is, by nature, thin and poor, so it requires an immense amount of care and money to make and keep these lawns, although the damp climate favors the work. Well kept and fresh they are, indeed. "And no wonder," I heard a lady exclaim, "for when there are signs of a drought, the owners come forth and water them with their tears." The statement that the particularly beautiful turf which covers the two or three acres of a certain gentleman is annually taken up and rolled away in his cellars over winter, is an equally amusing fiction; yet this I heard told more than once, with an accent which almost implied belief in its truth.

Beautiful and appropriate as are these lawns on the landward side of the Cliff Walk, a mistake has perhaps been made in continuing them on its seaward side, where they skirt with a very narrow border the rough rocky edge of the cliff, or are carried down the slope for a considerable distance in places where the rocks lie lower. In such places as these they have too much the look of earth-works for defense; and everywhere they unite but poorly with their bold rocky finish. The pathway might better, perhaps, have been taken as the boundary line for the lawns, and the spaces beyond, whether wider or narrower, treated in a naturalistic way—made to look as though the hand of man had not tampered with their original covering.

The fierce sweep of the sea winds in winter is, of course, injurious to the growth of trees in such exposed situations as those along the Cliff Walk; but shrubs and flowers can be made to grow with great luxuriance. The lapse of five or six years has surrounded many of the newer houses with rich thickets of tall shrubs and even with trees of considerable size; and year by year veritable carpets, in the shape of formal beds of bright flowers and foliage-plants, are spread out around them. These beds deserve admiration from the merely cultural point of view—nothing could be better, as far as luxuriance and neatness are concerned. Nevertheless, I think they may be counted as another item to excuse the cynic who speaks of bad taste in connection with Newport. Bold effectiveness, rather than beauty, seems, as a rule, to have been sought for alike in their composition and in their disposition. As a rule, their colors are crude and inharmonious, and they are multiplied out of all reason and placed where they do the greatest possible harm to the effect of the grounds as a whole. The fact is doubly to be regretted, for Newport is the very place where formal bedding might often be used to the best advantage. Nowhere do we see so many houses of the most formal and dignified character standing close to a road or even a street, and surrounded by very small grounds. In such cases a formal disposition of the grounds might well suggest itself as the most appropriate. But to be good in effect the scheme should be consistent. Formality should reign and rule, not merely occur in certain features. But, instead of straight-lined roads and paths and regular arrangements of shrubberies, clipped hedges and formally shaped trees, with which pattern-beds and borders would be in true accord, informal schemes are seen where landscape effects are simulated in miniature—where winding drives and paths are flanked by "natural" groups of trees and shrubs and tall flowering plants—sadly interfered with, often, indeed, wholly ruined, by a profusion of flat beds and borders, rigid in outline and gaudy in color. No outlines can be too formal for such beds, if they are graceful in their own way and if the general scheme sanctions formality; and no colors too bright, if harmony in contrast has guided their selection. But I think we may look in vain at Newport for a place in which all these conditions are respected.

There are exceptions, however, to the general and excessive use of bright set beds and borders. Here and there—as in the pretty grounds of Mr. Sheldon, on Narragansett Avenue—a small expanse of lawn is made the most of by plantations which merely fringe its borders, and lies in refreshing peacefulness, undisturbed by notes of gaudy color. Mr. Goelet's large place, again, where this avenue meets the Cliff Walk, needs the removal of but one or two beds to make it perfect. There is no other house in Newport at once so beautiful and so appropriate in its beauty, and none so charmingly connected with its grounds. When I saw it the wide lawns were in perfect condition, rising into a low, grassy terrace all around its base; vines had grown upon it to just the right extent; a few formal plants in pots appropriately adorned its steps, and the masses of green which decorated the piazza towards the sea were undisturbed by over-prominent notes of color—a single yellow flower-pot giving just the one needed touch of brightness.

This, I think, is a type of what a Newport house should be when its grounds are comparatively large, and when a further air of spaciousness and country freedom is given them by an open seaward prospect. But it would be less appropriate on a more contracted site with no frontage save towards a street.

Here villa-architecture, properly so-called, is more appropriate—houses which shall be neither city residences of the usual pattern nor true country houses, but midway between the two. No one can find fault if a Newport house, no matter how small its grounds may be, is itself large and costly. It must be this, in very many cases, or it will not fulfill its purpose. But it is a mistake to imitate in its fashioning either an English type of country house, which needs a stately park about it, or the boldly picturesque shape of some American country home which commands a wide prospect over picturesque acres of its own. Dignity is required, and, to a large extent, symmetry also; an air of sumptuousness and generous accommodation combined with a certain reserve as of a building near its neighbors and near the public gaze. The "colonial" style, which of late has been so extensively revived in many parts of the country, seems to offer, perhaps, the best type for such a house. And it seems as though here of all places we might expect to find it used, as the old town of Newport was one of the chief centres of colonial art. Nevertheless, new "colonial" houses are conspicuous by their absence. The only one I noticed is apt to be overlooked by the transient visitor, lying, as it does, in one of the older streets, half hidden by trees. This is the beautiful brick house built not long ago by Messrs. McKim, Mead and White for Colonel Edgar. It is as entirely appropriate to its place as is Mr. Goelet's house, and the difference between them is all the more instructive since the same hands designed the two.

The back of Mr. Fiske's house on Ochre Point is charming in both form and color—a happy relief in its lowness and its quiet browns from the towering outlines and strong tones which too often meet the eye. But its best feature is the wall of beautiful pinkish stone which connects it with the stable and the street. It was a wholly fortunate idea to edge the base of this wall with a narrow border of bright-hued plants, as they enliven the prospect but do not disturb it, being thus closely connected with architectural forms. And this summer the vines had grown upon the wall, as upon the house itself, to exactly the right extent—softening and adorning but not wholly concealing the surface. The great trouble in some places is to make vines grow; the great trouble at Newport is to keep them within bounds. The recent introduction of the so-called Japanese Ivy has already meant in many places the entire concealment of the forms beneath it. When these are bad the result is a happy one—a seeming wall of verdure is certainly to be preferred to an ugly fence or foundation story. But when the forms and colors are good, then their concealment detracts from beauty, while the vines themselves look best with a visible background. On Mr. Fiske's house, and on Mr. Goelet's as well, it will be a pity if the vines are ever allowed to exceed their present estate. On many other houses one might wish them to grow to the very chimney tops. *M. G. Van Rensselaer.*

New York.

The Japanese Plums—The Satsuma.

SINCE I wrote of the Kelsey Japan Plum, Batankio (or Batankin, as some call it), last month, I was so fortunate as to find young trees of that most curious of fruits, the Satsuma Plum of Japan, or, as it is now quite generally known, the Japan Blood Plum, in fruit in the grounds of the University of California at Berkeley. The tree is a much stronger, smoother grower than the Kelsey; leaves smoother and more lanceolate, wide in the middle and narrowing to each end; twigs stout, long and smooth. The fruit is round, with a deep suture on one side; dark dull red, with bloom, flesh dark, bright crimson or cherry red; skin very thin, with no acerbity; flesh or pulp very fine grained, very juicy, abundant free blood red juice; when fully ripe, melting and delicious. We may say, first best in quality to eat from hand when fully ripe. The Plum, when first mature, is quite firm, and will prove a good long shipper. When over-ripe, it becomes very soft, but still juicy, and not mushy. In size, the Plums examined were about the size of the native Plum known as Miner, or about the size of the well-known Green Gage, but it is said to grow much larger. The stem is longer and more slender than that of the Kelsey, which is very short and thick for a Plum. The pit of the Satsuma is quite small for the size of the fruit, roundish, somewhat pitted and corrugated.

This Satsuma very closely resembles in tree, leaf and growth a Plum tree sent east from California under the name Ogon, which proved quite hardy with me in Illinois in our severest winters, much more so than the Kelsey, and it may be that some of these fine fruits may do well in the great north-west. Since I wrote of the Kelsey last month I had some of them stewed for sauce, and found them very nice served in that way.

Many young orchards in different parts of this state of the Kelsey have fruited for the first time in quantity this year, and all report them very productive and profitable. The keeping qualities of these Plums are truly remarkable. I have before me a very large specimen of the Kelsey, gathered when fully mature, one month ago yesterday. It is yet perfectly sound.

That the Kelsey is quite near to the Peach in many of its peculiarities is plain to any one who will examine it critically. It has the stem and pit of the Peach. The pit is corrugated, pitted and shaped like that of the Peach, and the kernel has the same skin and flavor, and fully bears out the view that I had long ago formed from observation, namely: That we may expect, and that we now have, hybrids between nearly all the different species of the Almond family, and that we may look for very valuable future results from such hybrids.

Hybridism brought about by skillful artificial means should be continually striven for, though we may have 10,000 failures for each success. Given our fully hardy native Plums as a base—they lacking somewhat in self-pollenization, making them easy to experiment with in this line—should give the north-west in time some good, fine hardy fruits.

The high mountain regions of northern California have some fine native Plums that may prove of value in this work. But it is best for those who work for the great north-west to stick pretty close to the wild Plums of the northern part of that region. Some of them are really fine, valuable fruits in their wild state and capable of endless improvement.

The Plums proper, those of the European type, are not proving as profitable in California as the other members of the Almond family. They nearly all do finely and bear enormous crops of magnificent fruit, but are too acid when canned or dried, except the Prune section. Of these the sweet, raisin-like French Prune, the Petit Prune de Agen, is grown in great quantities, and is still being more largely planted than any other fruit. The tree is a strong, healthy, handsome grower, wonderfully productive; the fruit very sweet and easily dried into the Prune of commerce. The crop is very regular and certain. An item before me gives the yield of an orchard in Tulare County, only four years old, at 300 to 500 pounds to the tree. At the lowest price Prunes have sold at on the tree this season, a cent and a quarter a pound, and at the lowest figure of product as given, to wit, 300 pounds, we would have a net return from this orchard of $375 an acre, and this in Tulare County, which, twelve years ago, was considered a worthless arid desert.

But give the exceeding rich soils of these so-called deserts a little good water from the mountains and we have at once the fruit growers' and fruit tree and vine paradise, where nearly all the fruit-bearing trees and plants will grow and thrive wonderfully, and where great commercial fruits, such as the Raisin Grape, Prune, Peach, Nectarine, Apricot, Fig and Pear, can be perfectly dried in the open air cheaper and better than anywhere else in the world where they can be grown with success. And this is not all. In the hot, dry, even morning air of the great Joaquin Valley, but very few of the insect enemies, so injurious to fruits, can propagate, and none—yes, we may say *none*—of the destructive moulds, blights and rusts, so destructive in moist climates, can there exist. Sun-dried fruit there is as perfect, from these reasons, as the very best evaporated fruit east.

Over 500,000 acres have just been redeemed from the sway of the Jack rabbit in Merced County, by the great Crocker and Heffman canal, costing a million and a half of dollars. This adds that amount of the very best of soils in one of the best fruit regions in the state, in a fine, healthy climate.

D. B. Wier, in American Florist.

"Gardening, in the perfection to which it has been lately brought in England, is entitled to a place of considerable rank among the liberal arts,—it is an exertion of fancy, a subject for taste; and being released now from the restraints of regularity and enlarged beyond the limits of domestic convenience, the most beautiful, the most simple, the most noble scenes of nature are all within its province; for it is no longer confined to the spots from which it borrows its name, but regulates also the disposition and embellishments of a park, a farm, or a riding; and the business of a gardener is to select and to apply whatever is great, elegant or characteristic in any of them,—to discover and to show all the advantages of the place upon which he is employed; to supply its defects, to correct its faults and to improve its beauties. For all these operations the objects of nature are still his only materials."—From Thomas Whately's "Observations on Modern Gardening," London, 1770.

New or Little Known Plants.

Pentstemon rotundifolius.*

To the red-flowered Pentstemons, which are among the most ornamental species of this showy genus, Mr. Pringle last year made an interesting addition, of which Mr. Faxon has now given us an excellent figure. As found growing from the crevices of cliffs in the mountains about Chihuahua, with its large panicles of scarlet flowers drooping over the rocks, its habit seems very unique. In the character of the flowers it appears to be most nearly related to *P. centranthifolius* of Southern California and Arizona, having the same narrow, tubular corolla, with a nearly equally lobed, erect limb, though in this respect it is also much like *P. Eatoni*. The plant is very glabrous and glaucous throughout, woody at base, and the stem quite leafy. The thick leathery leaves are rounded and entire, and, except the lowermost, are closely sessile. *Pentstemon rotundifolius* flowered during the present season in the Royal Gardens, Kew, from seed collected by Mr. Pringle. *S. W.*

Foreign Correspondence.

London Letter.

The season has come when not a single important class of plants is in full bloom. I went through some of the great nurseries this week, and was surprised to find them so flowerless. Chrysanthemums, which from November through the winter occupy the attention of all gardeners, have, it is true, a few very fine forerunners, which tend to enliven our green-houses, and it is satisfactory to see that every season brings new early varieties of this flower. Frenchmen seem to be very active just now in raising new October-blooming sorts of the Japanese and other large flowered sections, and at the meeting of the Royal Horticultural Society on Tuesday last there was quite an array of new varieties, of which four only were considered worthy of first-class certificates. Having regard to the enormous number of varieties now in cultivation, and the obvious difficulty in comparing the new with the old, the committee are wise in not awarding certificates precipitately. Of the four certificated, the finest by far was one called Sunflower belonging to the Japanese section. It has large flowers and very long florets, which hang gracefully like a tassel. The color is the brightest yellow imaginable. It was shown by W. Holmes, the Secretary of the National Chrysanthemum Society, who considers it not only the finest early yellow, but one of the best of all yellow Chrysanthemums of its class. Another first-rate novelty is Lincoln's Inn. It is a large flower with shortish florets, which are a rich, brown crimson on the upper side, and yellowish below. Edwin Molyneux, also certificated, is a large and not very beautiful flower, being coarse in the opinion of many. It is like that named Comte de Germiny, but is of a brighter chestnut-crimson. The fourth sort was Magicienne, with large flowers and reflexed florets of a reddish orange hue. Besides these a fifth sort named Capucine was selected on account of its floriferousness. The flowers are small, the color bronzy orange, and the habit of growth good. It is called a "decorative variety." Among the other new sorts shown I singled out the following (all Japanese sorts) as the best: C. J. Quentus, pink; Charlotte de Montcalrier, long florets, pink; Madame C. Souchet, chestnut-crimson, reflexed; Othello, yellow and crimson; C. Wagstaffe, good, large, pure white; T. Stevens, pale pink; Mad. Louise Leroy, white and pink; and C. Delmas, crimson. Some of these were scarcely forward enough to allow us to judge adequately of their merits, and consequently were passed over by the committee.

A few Orchids of exceptional interest were shown, and three of them were certificated. The most remarkable was the Cattleya Lamberhurst Hybrid, a cross between *C. citrina*, which always grows downwards, and has large, wax-like flowers of deep yellow, and *C. intermedia*, a well-known old species. The hybrid has its growth with a decided downward tendency, the flowers are not so large as those of *C. citrina*, the sepals and petals are blush-pink, while the labellum is prettily marked with rose-pink and white. Though not a gorgeous Orchid, it is extremely pretty, and possesses a great interest for growers. Another new hybrid, also raised by the late Dr. Harris, of Lamberhurst, was *Cattleya Harrisii*, a cross between *C. Mendelii* and *C. superba*. In this case, too, the characters of the parents are strikingly blended in the cross. The flowers are about as large as those of *C. superba*, and resemble those of that species in form. The sepals are rose-colored, the broader petals deep rose, while the lip is a beautiful crimson-carmine. These two hybrids came from Baron Schroeder's rich collection at Egham, and are extremely rare. Another certificated Orchid was a new Oncidium, shown under the name of *O. Mantieri*. It is a supposed natural hybrid between *O. Forbesi* and *O. Marshallianum*. It much resembles the first named in growth and in flowers, though there are evident traces in its features of the showy yellow of *O. Marshallianum*. It will, no doubt, prove a valuable plant if it habitually flowers in October, when Orchid-houses require enlivening.

One of these Orchids came from Messrs. Veitch, who also won a certificate for their new Javanese Rhododendron named Yellow Perfection, which is far the finest pure yellow sort yet raised. The truss is enormous, and the flowers are two inches across, with broad, overlapping petals which are of the clearest chrome-yellow. Messrs. Veitch themselves think that this is one of the greatest strides they have made in this race of green-house Rhododendrons. These shrubs are now a most important class of green-house plants, and, since their culture is becoming better understood, they are becoming popular in all good gardens. In an intermediate house, not an ordinary green-house, they require the simplest treatment, and they may be called perpetual bloomers, as they seldom are out of flower. At Veitch's nursery one can see, at the present time, a large house full of flowering specimens, representing a large number of sorts, every one beautiful. In color some of the older kinds have not been excelled by the newer hybrids. None are now more pleasing in color than the old Taylori, one of the earliest hybrids, and Princess Royal, also one of the first. But the improvement has been in size of truss and bloom, as well as in the shape of the flower. I look upon these Rhododendron hybrids as one of the best among the many great things accomplished by the Veitches during the present generation, and their name will always live in connection with these beautiful plants. The great desideratum now is a new Rhododendron of a distinct color which would hybridize with the present race.

London, October 25th, 1888. *W. Goldring.*

Cultural Department.

The Flower Garden.

As our garden is on the north shore of Long Island, it is not visited by frosts so early as are those of our more inland neighbors, and this year has been exceptionally mild. Until to-day, Nov. 15th, but two slight frosts have occurred. The garden, therefore, is still gay with the blossoms of many plants.

Chrysanthemums are now in their glory, and make a magnificent dispay where massed in banks against the south side of buildings, and even in open garden beds where they have been grown all summer. Wind and rain batters them about and injures the flowers if left unsupported, but where well tied up to a stake, the flowers are held steady and kept clean, and are in fine condition. Under out-door cultivation the colors are deeper than when the flowers are produced under glass, and in the case of some white-flowered varieties like Domination they display quite a lilac or purple tint. With Elaine, Fair Maid of Guernsey and some other whites, however, this rule does not hold good. Among our finest out-door varieties this year are Gloriosum, Gloria Mundi and Golden Dragon, yellow; Elaine, Jessica, Falconer's Early, Domination

* P. rotundifolius, Gray, *Proc. Amer. Acad.*, xxii. 307. *Gardeners' Chronicle*, 3 ser., iv. 264, f. 31.

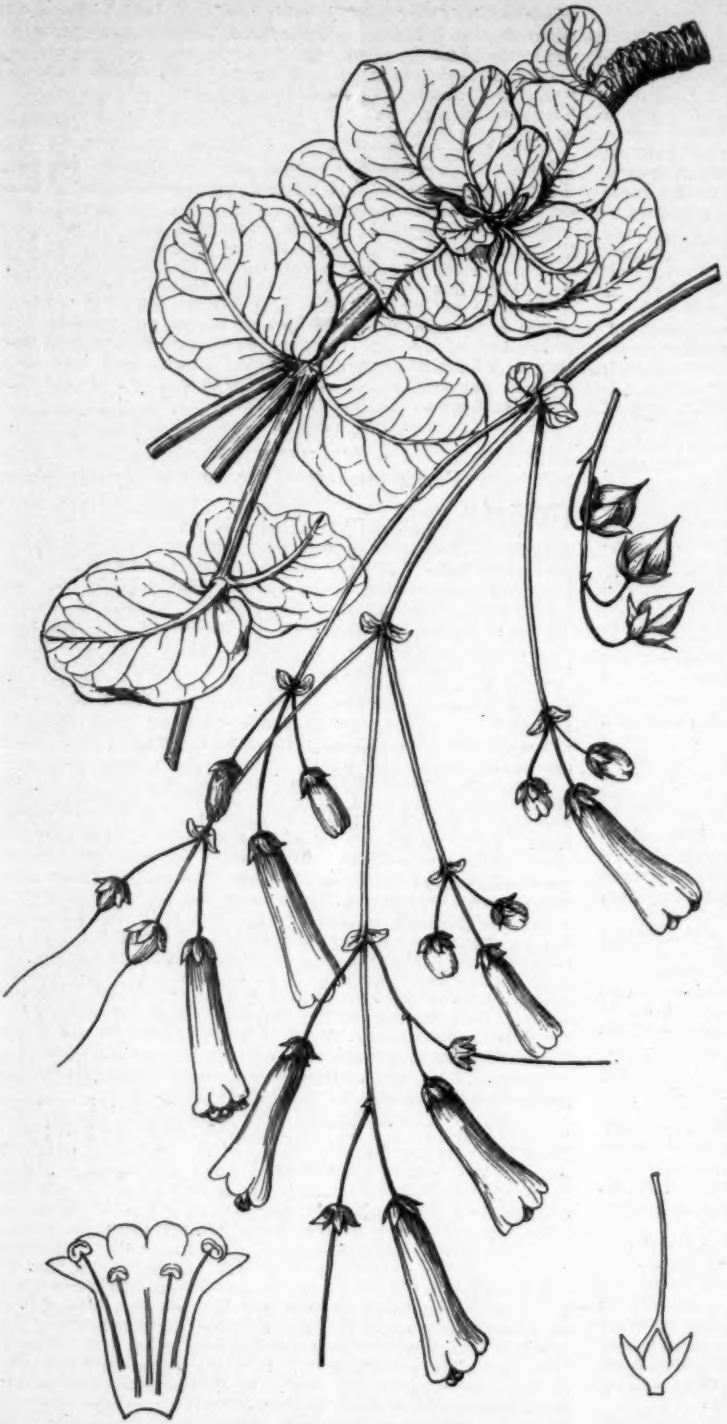

Fig. 73.—Pentstemon rotundifolius.—See page 472.

and Mrs. N. Hallock, white; Julie Lagravere, Cullingfordii and J. Delaux, crimson; Lakme and R. Walcott, red; Brazen Shield, Source d'Or, Early Red Dragon, and Incomparable, golden bronze; and Roseum Superbum, Mrs. Talford, Admiration and M. Panchenan, shades of purple. For an abundance of blossoms the named varieties are far inferior to our this-year's seedlings. Some of these are poor enough and some are good, but the unusual vigor of the plants and the immense masses of flowers they are bearing more than compensate for their ordinary quality.

A few years ago a large-flowered form of *Chrysanthemum segetum*, the European Corn Marigold, was introduced by seedsmen as a novelty. Although it is a very bright and pretty flower, it is a bad weed, and self-sown seedlings come up all about the garden where the old plants grew. Just now it is one of the brightest flowers in our garden, and the frost has not hurt it a particle.

The Meteor variety of the Pot Marigold is finer now than it has been before this year. It is from midsummer sowings. This flower, Mignonette, Sweet Alyssum, Pansies and Czar Violets, keep on blooming throughout the month of November, or even longer if they are not subjected to more than seven to ten degrees of frost. Zinnias and Heliotropes have been destroyed by frost, and African Marigolds, of which the Eldorado strain is a good type, have been considerably injured. The dwarf striped French Marigolds, however, keep on blooming as if it were yet only September, instead of November. Frost injures the flowers, but the unopened buds escape, and soon bloom out and renew the display.

Among Gaillardias all the annuals are so far past as to be not worth keeping longer, but the handsome large-flowered varieties of *G. aristata* are still in excellent bloom. Two Centauridiums, *C. Drummondii* and *C. Texanum*, both yellow-flowering composites, have been in bloom since midsummer, and are now in finer flower than they have been at any former period. *Coreopsis coronata* and *C. tinctoria* still supply a fair display of blossoms, but all of the other annual and perennial species are done blooming. *Rudbeckia bicolor* from June sowings is very showy and full. *Erigeron speciosum* is yielding a fair second crop of flowers; so, too, are the Red Valerian, Double White Feverfew and Indian Pinks. Summer sown Snapdragons have a few good flowers, and *Tagetes lucida* is finer now than it has been all summer.

The dwarf blue Alkanet is very fine; so, too, is *Cosmos bipinnatus*. For October flowers this Cosmos is one of the finest things ever introduced to cultivation. It blooms abundantly; its flowers are large, showy white or rose-purple, and last well when cut. The greatest fault of this noble Mexican annual is its habit of blooming so late in the season and its tenderness, for a degree of frost will ruin it.

One of the brightest and prettiest red flowering plants now in bloom in our garden is *Alonsoa Warscewiczii*. It can be treated as an annual raised from seed sown in spring and planted out over summer. It is now blooming more copiously than it has been at any other time of the year. Slight frost does not hurt it. Drummond Phlox is still abundant, but the plants are mildewed, and therefore the flowers are curtailed in proportion.

Christmas Roses (*Helleborus niger*) seem to be a little early this year; bunches of white flower-buds have risen some eight or nine inches above ground, but none of them are quite open yet.

Most of the summer tender vines have been killed down and cleared away. But *Manettia bicolor* is still studded all over with yellow-tipped scarlet flowers, and purple blossoms hang thickly upon the *Maurandia Barclayana* growing on a fence. *Cobæa scandens* raised from seed sown last March has run more than twenty feet over and along a high trellis fence, and is still full of its purple bell-shaped flowers and drooping seed-pods. A stretch of Lobb's Nasturtium (*Tropæolum Lobbianum*) along a fruit-tree border in front of a south-facing wall had the leaves scorched a little by frost, but all the flowers that were protected by the peach shoots and Nasturtium foliage are bright and perfect.

Spheralcea Emoryi is a little plant which is still in good bloom, as it has been for a long time. It is a hardy perennial from the eastern slope of the Sierra Nevada, and has small terra-cotta red flowers in copious quantity. Perennial Larkspurs, Tritomas and Salvias still yield some flowers.

Glen Cove, L. I., Nov. 27th. *Wm. Falconer.*

New Hardy Hybrid French Gladioli.

HAVING again, during the summer and autumn now drawing to a close, grown, for study and comparison with older varieties, the set of ten new hybrids of the Purpureo-auratus crossed with Gandavensis race, distributed towards the close of last year by M. Victor Lemoine, of Nancy, some notes as to their respective merits and beauties may perhaps induce others to cultivate these beautiful and easily-grown, hardy, bulbous plants. The comparatively cold and almost sunless summer we have had this year has in no way interfered with, but has indeed been far more suited to the growth and perfect blooming of these plants than the torrid season and long drought to which they had to submit last year, which prevented many of the varieties of that year from coming to perfection at all. The ten varieties belonging to 1888 are:

Boussingault.—This commenced to bloom on August 1st, and is a very strong grower, producing three flowering bulbs from one. It has medium-sized, creamy yellow flowers, with most distinct and beautiful, clearly-marked lower petals, the outer half of which is deep canary yellow, the inner half deeply feathered maroon. This beautiful variety, also Louis Van Houtte and Oriflamme, were well figured on the colored plate appearing in the Paris *Revue Horticole* for May 16th, 1888.

De Humboldt is a vigorous-habited variety with good-sized flowers opening well together on the spike, and thus showing a good many flowers in full beauty at the same time. The color is a deep rosy salmon, with clear yellow under-petals, distinctly blotched with light maroon.

Emile Galle is rather a slender-growing variety which, in the bud state, promised to be of quite a novel shade of violet not hitherto met with in these hybrids, but on the expansion of the flowers they proved to be washy and pale in color, thin in texture and deficient in form. Only the lower petals are beautiful, being of a deep shade of violet with a thin line of gold down their centre. It is quite possible, however, that this, being quite a new break in color, may prove the parent of many beautiful varieties in years to come.

Eugene Lequin is a variety of medium height, with pale lemon-colored flowers distinctly marked on the lower petals with broad blotches of velvety carmine, and is altogether an extremely pretty flower.

E. V. Hallock is a vigorous growing variety, and one of the most beautiful of the whole series, with large fully opened flowers of a clear, pale shade of canary yellow, the three lower petals clearly and evenly blotched with pale carmine. This should be in every collection.

Le Horla.—A rather weak-growing variety, with flowers under the medium size, of a pale shade of red. The three lower petals are yellow, distinctly blotched with carmine, and the centre one edged with pale red. The flowers of this variety may come larger on a stronger plant.

Mirabeau.—A rather weak grower, with large, well-expanded flowers of a somewhat dull shade of yellow, faintly flamed with carmine, and with broad and most distinctly marked blotches of deep maroon on the lower petals.

Louis Van Houtte.—This is a rather dwarf-growing variety, with medium-sized, well-expanded flowers of a pale yellow shade of color, faintly blotched with carmine on the lower petals. The flowers open well together on spike.

Oriflamme.—A vigorous, tall-growing variety, with branching flower-spike, and producing deep rose-colored flowers, blotched with carmine on the lower petals.

Victor Massé.—This is a washy, indistinctly colored and worthless variety, which did not, I think, deserve a name.

The seven varieties distributed at the end of 1886, and which I was unable to describe adequately last year, were:

Mons. A. Thiers.—This is a very pretty variety, of rather vigorous habit, with medium-sized, well-opened flowers, which are rather far apart on the spike, of a clear shade of deep rose, flaked with carmine. The lower petals are clear canary yellow, edged with rose and blotched with maroon.

Marquis de Saporta is a variety with medium-sized scarlet flowers, with a lighter throat, and are closely set on the spike and open well together. The lower petals are rather indistinctly flaked with maroon-yellow.

Montesquieu is a tall and vigorous grower, with large, well-expanded, light red flowers, flaked with carmine. The lower petals each bear a distinct and pretty flame of deep rose color tipped with yellow.

De Chervillé.—This is a vigorous grower of medium height of spike, with flowers rather under medium size, of a rather dull shade of deep rose color, somewhat indistinctly flaked with maroon and yellow.

Braconnot.—A variety of medium height and not very vigorous habit of growth, with medium-sized blooms of a deep shade of scarlet, prettily flaked with canary-yellow on the lower petals.

Gounod.—A rather weak-growing variety, with flowers of a rather dull shade of yellow, faintly shaded with rose color. The two lower petals are evenly divided between deep velvety maroon and clear canary-yellow, the latter outside.

Jean Jacques Rousseau.—A variety with pale orange-scarlet flowers distinctly blotched with carmine on the lower petals; each blotch is edged with pale yellow. This is an exceedingly pretty variety.

M. Lemoine again sends out this winter fifteen more varieties of this race of hybrids. He has not, however, yet been able to get up sufficient stock of the beautiful new race of hybrids he has obtained by crossing *G. Saundersi superbus* with some of his own Purpureo-auratus race; of these he hopes to be able to distribute one or two varieties towards the end of next year. Another foreign nurseryman, M. Otto Frœbel, of Zurich, has also obtained some bright and pretty hybrids between *G. Saundersi superbus* and *G. Gandavensis* which he hopes to distribute shortly.

W. E. Gumbleton, in *The Garden*, London.

Ferns for the Window Garden.

ONE of the most common causes of failure in window gardening is unsuitable selection of plants. In fact, this is the principal cause, for, where man can live, some species of plants will thrive. After the Chrysanthemum is out of bloom, scarlet Pelargoniums, or some other flowering plants with bright colors, are generally selected for the window-garden. These cannot succeed where we cannot or will not allow clear, full sunshine. The living-room rarely affords this sunshine, which is necessary to the production of vivid color.

Most plants that have reveled in full light and pure air during the summer soon lose the bloom of health when brought into the living or sleeping room; they lose their strong, fleshy leaves, they become emaciated, and sicken and die.

For rooms where there is but little light, where the sun makes only a formal call once a day, Ferns will thrive luxuriantly, and the more beautiful species appear to thrive the best. As a family the Adiantums surpass all the others in graceful beauty, and of the species few can compare with the noble *A. Farleyense* or the delicate *A. gracilis*. These two I have grown with perfect success in the room of an invalid, when at times there would be but little light and hardly any full sunshine during the entire winter. So well did they succeed, that in spring they would have been given a prominent position at a Fern exhibition. In the same situation no flowering plants could be induced to grow; in fact, none were wanted, for none are as cheerful or restful to the weary eye as the delicate Adiantums. Some of the Adiantums make charming basket-plants; conspicuous among them is *A. Edgeworthi*, whose delicate fronds, when young, wear a lovely pinkish hue, gradually shading into a pale grayish-green.

If a climbing plant is wanted for the house, the Fern family will furnish this, too, in the *Lygodium scandens*, and a more beautiful plant, or one more easy of management, cannot be found. While it is a favorite in the green-house, and most useful for decorative purposes, it is well adapted to house-culture, as it requires but little light, and is not injured by gas or furnace heat, so fatal to most plants. It is a rapid grower, and with proper management can be made to complete its growth in summer, after which it can be introduced into any moderately cool room in the house, where it will remain an object of beauty the entire winter. There are scores of Ferns besides those named that are adapted for the house during winter; in fact, most Ferns do well, but none, I think, are as beautiful as the ones noticed. In using Ferns for the window one caution must be observed. Well-established plants must be secured to begin with. In their young and growing state they require a more humid atmosphere than the house affords, a condition that is not essential when the plant is fully developed.

Garden City, N. Y. *C. L. Allen.*

Cosmos hybridus.—This valuable plant was introduced some years since into this place and is now a conspicuous ornament of many humble cottage gardens. It is, perhaps, a hybrid of *C. tenuissimus*, but, more probably, only a garden variety. This plant grows here to a height of six or seven feet, but I have seen specimens at least eight feet high. The finely cut leaves are very attractive. The flowers—pure white or pale rose colored and single—are about two and one-half inches in

diameter, with crimped and fimbriated petals, and are produced in great abundance in terminal bunches. They have a pleasant, faint odor, but can hardly be called fragrant. The plant is easily grown from seed, which may be planted in the open ground in May, though it would certainly be much better to plant early in April in a hot-bed. Judging from the plants which I have myself raised, as well as from all those which I have seen, it would be very advantageous to pinch in the shoots at an early period of growth, so as to make them more bushy and to cancel the tendency toward a somewhat loose and sprawling habit. Here, in Newport, *Cosmos hybridus* begins to bloom early in October. My own plants, which were raised from seed grown in the open ground about May 20th, are now, November 9th, in full bloom, and yield a daily supply of charming flowers, worthily succeeding *Anemone Japonica alba* and *rosea*, which the large blossoms somewhat resemble. Though a Mexican plant, *Cosmos hybridus* resists the early autumn frosts remarkably well. Dahlias were cut down by frost in my garden ten days since. In the absence of any information as to the parentage of this plant, I suggest that, possibly, some fine dark colors could be obtained by hybridization with *C. bipinnatus*. The great value of the plant as a late autumn bloomer will soon lead to its general culture. *W. G.*

Newport, Rhode Island.

Pancratium speciosum belongs to a genus which is not grown so extensively as it deserves. The plants are mostly of easy culture, and with little trouble will produce abundant flowers. *P. speciosum* is one of the best of the genus, producing, in early winter, large umbels of pure white and very fragrant flowers, which last a long time in perfection. Even when out of bloom the plant is quite handsome, each bulb having four to six large, ovate, deep green leaves. The new leaves appear with the flower-spikes, and until they are thoroughly matured the plants require very liberal treatment—strong heat and abundance of water—and if the pots are well filled with roots, liquid manure should be given regularly. During the summer months the plants may be set out-of-doors in a shady spot and kept as dry as practicable without causing loss of leaves, which I think are better retained as long as possible. For potting material a mixture of sandy loam with a little leaf-mould will be found good. Pot firmly, and use large pots, so that repotting will not be necessary for some years.

Cymbidium Hookerianum is now bearing three racemes of flowers. In habit it much resembles *C. giganteum*, though much smaller; the leaves are a dark green, with streaks of yellow near the base. The semi-pendent racemes spring from the base of the matured bulbs, bearing about a dozen large flowers of a yellowish green, with the straw-colored lip blotched and spotted with crimson. The front lobe is very crisp. This species was introduced in 1866 from the Sikkim Himalaya, and should be grown in the cool house, with liberal waterings during active growth, and should at no time be kept dry. We use a compost—loam, peat and sand in equal parts. The plant grows very freely, but seldom blooms, and the flowers here are probably the first that have been seen in America. *F. Goldring.*

Kenwood, N.Y.

Orchids in New York.

THE fine collection of Mr. Hicks Arnold on Eighty-fourth Street, in this city, occupies a lofty, span-roofed structure, which formerly was filled with Palms, Ferns, etc. The temperature of the house is kept as near as possible from 60° to 65° by day, and 10° lower at night. The plants have made good growth during the past summer, and promise abundant flowers. Orchids in bloom are rarely seen in quantity at this season, but at a recent visit I observed several worthy of note in flower, and among them a beautiful form of *Cattleya Dowiana*, with rich, well-developed blossoms, the sepals and petals being of a charming buff-yellow, the broad, dark purple lip handsomely veined with the brightest golden-yellow. A specimen *C. Gigas*, suspended from the roof, had produced five flowers of great size and of good substance, and the plant still has six newly-made flower-sheaths, which in a few weeks will make a grand display. Other Cattleyas soon to flower were fine plants of *C. Skinneri alba*, *C. Trianæ alba*, the deep purple-flowered *C. Lawrenciana*, a strong-growing plant of the pretty yellow *C. luteola*, and a number of *C. Trianæ* and *C. Mendelii*. Well-grown plants of *Lælia Perrinii*, in position near the glass, had a number of sheaths, and several were already in bloom. *Lælia purpurata* and *L. elegans* were represented by strong specimens, and a plant of the showy *Lælia Patinii*, which had made very stout growths, was well furnished with flowering sheaths. In habit this Lælia resembles *Cattleya Skinneri*, and is a species of easy culture. Quite a fine selection of Cypripediums were growing very rapidly on the north side of the house, and among many others was the beautiful *C. Morganiæ*, a plant of *C. grande*, with foliage of a remarkably robust character; *C. ænanthum superbum*, the new Hybrid *C. Godseffianum*, said to be a cross between *C. hirsutissimum* and *C. Boxalli*; *C. Io* in bud; *C. almum*; strong plants of *C. Curtisii*; *C. Leeanum superbum*, showing flower; *C. Sklemii album*, *C. Veitchii*, *C. præstans*, *C. Lawrenceanum biflorum* in bloom, and a fine example of *C. albopurpureum*. A number of Dendrobiums were looking at home at the warmest end of the house. Specimens of *D. Wardianum* were just completing their new season's growth, having bulbs measuring some four feet in length. A plant of *D. nobile Sanderianum*, said to be the finest of all this section, was doing well in a teak basket, having made a very stout lead, and with it were plants of *D. Ainsworthii* and *D. Leechianum*, both scarce and very showy. Flower spikes were showing in quantity on well-grown plants of Phalænopsis, including *P. Sanderiana*, *P. Schilleriana* and *P. amabilis*, and the lovely *P. tetraspis*, with its blossoms of the purest white. A beautifully-grown specimen of *Angræcum Scottianum* had just passed flowering, having produced as many as thirty snow-white blossoms. A large plant of *Angræcum eburneum* was specially noticeable, with twelve strong spikes from four sturdy growths, and during the months of January and February will make an effective show. Vandas and Ærides were hanging in numbers from the roof, and were pushing their roots to the outer surface of the baskets, enjoying the moist and warm atmosphere so beneficial to them. A fine example of *Vanda cærulea* had produced a stout spike, and will bloom very shortly. Several well-grown plants of *Ærides Lawrenciæ*, *Æ. Sanderianum*, *Æ. Houlletianum* and others were exceptionally fine, with foliage of a very deep green. The Odontoglossums that were enjoying this temperature were *O. Roezlii*, *O. vexillarium*, and a plant of the chaste and pretty *O. Warscewiczii*, which was rooting freely in a glazed pan, and suspended near the glass in close proximity was a large plant of *O. Phalænopsis* in bloom, its white and violet-crimson markings strikingly effective. A lean-to structure of small dimensions contained a group of the cooler species, including some strong plants of the *Odontoglossum crispum* type, *O. Pescatorei*, *O. crestatellum*, several already being in bud.

During the past summer a number of plants were subjected to out-door treatment with very satisfactory results. A light, open, frame-work structure, some twenty-five feet long by ten wide, was erected on the lawn, with a stage for the plants three to four feet from the ground, the only covering being a sheet of the thinnest canvas to protect them from the direct rays of the sun. Above this was fixed another roll of very stout cloth, nearly water-proof, which was immediately let down when cold winds or storms were expected. In this way the following plants, amongst many others, have made rapid and unusually fair growth, viz.: *Odontoglossum Alexandræ*, *O. Pescatorei*, *O. citrosmum*, *O. grande*, *O. Rossii*, *O. Harryanum*; all the varieties of *Lælia anceps*, *Oncidium ornithorhynchum*, *O. tigrinum*, *O. incurvum*, *O. varicosum*, *O. Marshallianum*, *O. sphacelatum*, *O. Cavendishianum*, *Lælia autumnalis*, *L. albida* and *L. majalis*, *Ada aurantiaca*, *Cypripedium insigne* and its varieties, *Cælogyne cristata*, *Lycaste Skinnerii*, *L. aromatica* and Masdevallias in variety. The plan is very cheap and simple, and is well worthy of a trial, as it will be the means of preserving many of our cool-growing species during the extreme summer heat, which is so detrimental to the growth of the plants. *A. D.*

The Lawn.—Should time and weather permit, lawns should now be raked clean with wooden rakes, so as to remove stones, dead grass, and leaves. This lessens the work in Spring. And in spots where the grass has been choked out by Sorrel, Mouse-ear Chickweed, common Chickweed, Creeping Speedwell, or Moss, rake off as much of the weeds as possible with a steel bow-rake, then mulch over the places with a heavy dressing of manure or compost. Rotted cow manure is the best for this purpose, as it is full of seeds of pasture grasses, and these come up so thickly in Spring that it matters little whether the bare spaces are resown or not. If lawns are to be top-dressed with manure, this is the proper time to do it, for in frosty weather carts can be driven over them without leaving wheel-prints in the soil. The dressing should by all means be scattered as it is hauled out on the grass, otherwise a stiff frost may come and prevent its being spread at all this season. Let the manure used for dressing be old and rotted fine. *G. C.*

The Live Oak.

THE Live Oak (*Quercus virens*) is a familiar object to all persons acquainted with the vegetation of our south Atlantic and Gulf States. It is a large tree, although rarely growing to a greater height than fifty feet, with a short, thick trunk, sometimes seven or eight feet in diameter, and spreading, curved and often twisted branches. The trunk, which is covered with a deeply furrowed and very dark bark, often divides near the ground into several large branches, as in the characteristic specimen which appears in our illustration below, and which is growing near New Orleans. Sometimes the trunk does not divide until it has reached a height of twelve or fifteen feet, when it sends out immense horizontal branches which have been known to shade a space more than a hundred feet in diameter. The leaves are from two to three inches long, oval-lanceolate, obtuse, with entire and strongly revolute margins, or sometimes, upon vigorous young shoots, sharply toothed. They are coriaceous, dark green and lustrous on the upper, pale and pubescent on the lower surface, and remain upon the branches for twelve months, falling as the leaves of the succeeding year unfold. The cup is top-shaped, hoary, long-stemmed, and encloses the base only of the oblong, dark chestnut colored or nearly black acorn, which rarely exceeds an inch in length.

The Live Oak is found growing in the neighborhood of the coast from southern Virginia to Mexico; in Texas, west of the Trinity River, it extends into the interior, often as a low shrub, as far as the high mountain ranges in the western part of the state and into northern Mexico, where it ascends to an elevation of nearly 8,000 feet. It is found on the coast of Guatemala and in Costa Rica. The Live Oak attains a great size and is very common upon the Sea Islands of the Carolinas and Georgia and upon the adjacent mainland. It is common, also, upon the Gulf coast east of the Mississippi. The distribution of this tree is interesting and not easily explained. Abundant on the humid coast of the south Atlantic States, which must be taken as the region of its greatest multiplication and development, it is able to endure the extremely arid climate of western Texas, where few broad-leaved trees can maintain a foothold. There are but two trees, moreover, so far as is now known, belonging to the real North American flora, which extend into the tropical climate of Central America—the Live Oak and *Pinus Cubensis*. The latter, although it is not found quite so far north as the Live Oak, is confined to the seaboard from Carolina to the Mississippi, and then reappears upon the coast and on the uplands of Honduras and on the Guatemala coast.

Fig. 74.—The Live Oak (Quercus virens).

The value of the wood of the Live Oak in ship-building was recognized soon after the settlement of the Southern States, and after the acquirement of Florida by the government of the United States, it created a number of reservations upon the west coast of the peninsula for the purpose of maintaining a supply of this wood for naval construction. It is very heavy, hard, tough and strong, of a light brown or yellow color, and susceptible of a beautiful polish. The large branches, often growing nearly at right angles with the trunk, made the strongest and best ribs for large ships which could be found; and at one time there seemed a probability that all the large specimens of this

tree would be destroyed for this purpose. The substitution of iron for wood in ship-building has saved, however, the Live Oak. The trees are too hard and too difficult to cut down to make them very available for fuel; and the wood, although unsurpassed in beauty by that of any other American Oak, is not much used in cabinet work, for which it is well suited, owing to the difficulty of working it.

"The Acorns," old Mark Catesby tells us, writing more than a century and a half ago, "are the sweetest of all others; of which the Indians usually lay up store to thicken their venison-soop, and prepare them other ways. They likewise draw an Oil, very pleasant and wholesome, little inferior to that of Almonds."

The Live Oak is perhaps the most ornamental of all North American trees in cultivation. It grows very rapidly when young, more rapidly, indeed, than most Oaks; it thrives in nearly all soils, even when its roots are washed by sea-water during periods of high tides; but to develop all its beauties it should be planted in deep alluvial soil or upon the Carolina phosphates. A few old avenues of noble Live Oaks, and some single specimens in different parts of the South, especially in the coast region of South Carolina, are certainly the most stately and majestic trees which men have planted in North America. *C. S. S.*

The Forest.

Swiss Forest Laws.

THE Report of Mr. Conway Thornton to the British Foreign Office, on the Swiss Forest Laws, is a careful and interesting piece of work. From a summary which appears in a late number of *Nature* it is evident that from a very early date the various cantons endeavored to preserve the forests. Thus, in 1314, the authorities of one forbade "the felling, floating or selling" of timber from the Sihlwald; in 1339, another forbade charcoal-burning near the chief towns. Industries using wood were restricted in their operations; the laying out of new vineyards was prohibited under heavy penalties for centuries; and finally, during last century, the use of uncloven vine-props was forbidden. The exportation of timber took place only under great difficulties, and even the removal of timber from one place to another in Switzerland was, until 1848, very much restricted. In 1376, Zurich forbade clearings to be laid down in pasture, and Fribourg would not allow sheep-pastures to be established in clearings. Goats were not permitted to be let loose in the woods; and rosin-scrapers were excluded from many of the forests. None of these numerous decrees appear, however, to have had much effect, the very number of them testifying to their powerlessness to check the evil.

In 1702, prior to which date attention was paid solely to the maintenance and protection of the timber, the Government appointed a Commission to inquire how the forests might be best preserved, enlarged and improved; and subsequently issued a decree carrying the recommendations of the Commission into effect. In 1725, Berne followed the example of Zurich, and published forestry orders, which contained directions for the cultivation of timber and for permanent improvements. Similarly, in other cantons, improved systems were introduced; the compulsory planting of marshy meadow-land was decreed; a season was set apart for felling, the growth of Oaks was recommended, and the formation of clearings was forbidden. In 1755, an excellent forestry code was drawn up by Joseph Wilhelm, Prince-Bishop of Bâle. About 1760, two scientific societies—the Physical Society of Zurich and the Economical Society of Berne—made great efforts to introduce improved knowedge of woodcraft into Switzerland, and with this object they made strong representations to their respective Governments, and the Forestry Decrees of 1773 and 1786 were the results. The substance of these decrees may be stated to be the surveying of forests, the appointment of officials who would supervise planting, experiment on exotics, and help in teaching a more scientific system of wood cutting. By means of these measures some real progress was made, which, however, was stopped by the general confusion during the beginning of this century; but when peace was restored, the Helvetic Government turned their attention again to the forests, which by this time had suffered severely. Soleure was the first to start a system under which technical instruction was given to two citizens from each woodland district, the better qualified being chosen foresters. From this time until 1830, forest laws were drawn up universally, prescribing the modes in which timber was to be felled.

In consequence of the disastrous floods in Switzerland in 1830 forest laws were more generally enacted and more rigidly enforced than they had ever been before. The number of officials was increased, and great attention was paid to their training. In fact, the spread of the science of forestry in Switzerland dates from this period. At first the people thwarted the officials in every way, but, becoming gradually enlightened as to the utility of the government measures, they ceased from actual opposition. Even the most backward of the cantons began to realize that their true interests lay in the preservation of the forests, both as a commercial speculation, having regard to the advancing price of timber, and as a support for precipitous ground, and on account of its domestic and national uses.

Hitherto the students trained in forestry had been sent to the schools in Germany, but in 1855 the Confederation established a Forestry School, in which henceforth Swiss students were educated in the art of woodcraft and the kindred sciences. In 1858 a searching inquiry was made into the supposed connection of the forests and the course of the mountain torrents, and, as a consequence, the state aided the School of Forestry in their efforts to plant anew the ground where springs abounded, and officials were appointed for this purpose. With regard to these officials, mention of whom occurs in all the forest laws of Switzerland, we first hear of them in 1314, when, as in subsequent centuries, they were supposed to be aided by the inhabitants, every one of whom in a woodland district was sworn to disclose any breach of the decrees which came to his knowledge. The ordinary forest-keeper was generally nothing more than an intelligent wood-cutter; but when it was seen that some technical teaching was necessary, the skilled man, and, later still, the man with a knowledge of natural science and mathematics, was always preferred. In 1868 the disastrous floods gave a fresh impetus to the spirit of inquiry into the action of the forests on the rainfall and the course of the torrents; and in the revised Federal Constitution of 1874 an article was inserted giving the Federation control over the forests and waterways, and authority to interfere in any way they may think fit. Under this article two officials were appointed—the Federal Inspector of Forests, and also a sub-Inspector. The Forestry Societies unanimously adopted a programme which, being presented to the Federal Council, was embodied in the Forest Law proposed by the Council in 1875. This proposed enactment led to much discussion in the Assembly, but was finally passed by both Houses. The district to be subject to the law included not only the high mountain ranges, but also the hills bordering on the plains, as sharing in the protection afforded against floods and avalanches by the works which were intended to be undertaken in the former. The district included a tract of country in all about sixty per cent. of the whole of Switzerland, or 6,750,000 acres, about 15.8 per cent. of which was forest land. It was decided that the rights of private owners should not be infringed except in case of necessity—that is to say, where the woods of private owners were 'protecting' woods; in other words, where, on account of their position, they might have an influence on the climate, avalanches, landslips, etc. Each canton was required to maintain an efficient staff of officials; and to each individual who had received technical training an area of about 17,500 acres was assigned if in the plains, and 25,000 acres on the mountains. All the woods under official supervision, including, of course, private woods which came under the class 'protecting' woods, were to be demarcated, all clearings were to be immediately planted afresh, and where necessary new forests were to be created, the Federal treasury bearing from thirty to seventy per cent. of the cost, or, in the case of replanting protecting woods, from twenty to fifty per cent., according to the difficulty and the importance of the works, which were always required to receive the approval of the Inspector-General before the Federal subvention was granted. Anything which might endanger the utility of the forests was strictly forbidden; cattle were not allowed to graze, nor could leaves be collected except in fixed spots. To this enactment was added a 'Règlement d'Exécution,' which provides, among other things, for the course of education to be given to each student of forestry by the canton to entitle it to the Federal subsidy. Instruction must be given in the following subjects: (1) Forest-surveying and measurement in detail; calculations of the dimensions and value of single trees, and of outlying tracts of wood; road-making; safeguards against avalanches, etc. (2) Study of the different kinds of timber and of noxious plants. (3) Elementary knowledge of soils, and of

their component parts. (4) Fundamental notions of the laws of climate and meteorology. (5) Cultivation and care of forests. (6) Book-keeping and other general branches of instruction valuable for under-foresters. The Federal Government pay the teachers, who are appointed by the canton, subject to the approval of the Federal Government.

At the outset there were great difficulties in carrying out the Forest Law. There is not now in the cantons a uniform organization for carrying it out; and Dr. Fankhauser, one of the highest officials of the Forest Department, does not think that such an organization is possible, having regard to the differences in position and ideas of the various cantons. At the present time each canton possesses in a measure its own scheme of forestry organization. There are, however, two main systems in existence in the Federal district, the first of which prevails in the central, eastern and southern parts of Switzerland. Each canton is divided into districts of from 17,500 to 35,000 acres each, and over each district the canton places an officer who has received scientific training; under him are the keepers and deputy foresters, chosen by the owners from among the students of the local forestry school, and paid by them. Each deputy has about 3,000 acres to take care of, and has but to carry out the orders of his superior as to felling, clearing and replanting. In the next, however, a different system obtains. Here the country is far less mountainous, and the inhabitants industrial rather than agricultural in their pursuits. In these cantons the district forester has from 7,500 to 17,500 acres under him, and in this district he marks out all the fellings to be performed, and in fact does everything but the manual labor, which he leaves to his inferiors. In this district, where timber is very high in price, and the opportunities of sale numerous, the country is frequently reafforested by private individuals, while in the other cantons the state is forced to do nearly everything.

The salaries of the forest officials vary very much in the different cantons, but even in the best paid districts the remuneration is very modest. Under-foresters receive sometimes a fixed salary, sometimes only daily wages when employed. If the former, the sum varies from $125 to $250. If the rate of pay is per day, which is unusual, it is generally fixed at $1. District foresters usually receive from $440 to $560 a year. In Uri, however, $600 is given, and in a few places as high as $800 per annum. Cantonal forest inspectors receive from $600 to $900 a year, besides allowances, which are always given to the higher officials when traveling on duty, with the cost of the journey.

Correspondence.

The New York Chrysanthemum Show.

To the Editor of Garden and Forest:

Sir.—A flower show is hardly the place to see plants at their best. In the garden, in the field, in the green-house, or even in the living room they look better than when massed together, bottled, labeled, and stiffly contrasted in a crowded exhibition. Of course there is room for improvement in the arrangement of exhibitions—beauty might be considered a little more without any sacrifice in the way of convenience. But as it is we usually feel: These are beautiful things, but how much more beautiful they must be under other conditions.

This is especially true when Chrysanthemums are in question. As isolated blossoms some of them—not all—are very beautiful. But they need number and a particular kind of arrangement to appear at their best; for decorativeness, effectiveness, is their prime characteristic. Nor when we turn from the isolated blossom to the growing plant are we fully satisfied. The rather ragged habit of the Chrysanthemum and the comparative sparseness of its foliage seldom result in a plant which, however excellent from the cultivator's point of view, is a really beautiful object or shows its blossoms to the best advantage. To my mind the right way to see them is cut with long stems and arranged in a tall and capacious vessel. The bunch must be rather large, or the full stateliness of the flower and glory of its color will not appear; yet it must not be crowded together or the beauty of individual blossoms will be lost. Stiffly stuck in moss Chrysanthemums never look well; and massed in a tight layer on a low dish they scarcely look better. No matter how many of them there are the grouping should be light and open, that the combined grace and dignity of the spray with its many heads may not be concealed. And a tall vessel is better than a lower one, as more harmonious with the stately effect they can produce. Nor is the material of the jar beneath consideration. Clear glass is not desirable, as it is with Roses, for Chrysanthemum leaves and stems seen in the water are devoid of grace; nor should showy colors be permitted, which would detract from the effect of the flowers. Green cut glass, or white or blue and white china, or brass or silver—these are the best possible receptacles. Usually the bunch can be so graduated that its own foliage will suffice; but in no case should very delicate foliage be added, for the Chrysanthemum is certainly not a delicate flower. Of course as Maiden-hair Fern is now so high in favor it is often used with Chrysanthemums; nothing can be much more inharmonious than its effect, yet a basket thus composed took a second premium at the recent exhibition in New York.

But if a lover of beauty could tie his attention down to individual blossoms a wonderful amount of enjoyment awaited him in this exhibition. It seemed as though Nature herself might there acknowledge man's supremacy, seeing what he had made out of the suggestion she gave in her first Chrysanthemums. What splendid miracles of development he had brought about, and along how many different lines! There were no true scarlets among the endless colors, but there was every other kind of red and brown and pink; many purples, scores of yellows; no blues, but some yellows that were almost green; and whites in infinite variety. And now these colors were pure and solid, now flashed and streaked in the most indescribable ways; and now the one ruled on the under side of the petal, a quite different one above, and yet each kept its perfect purity. Anything more gorgeous than the contrast of red and yellow thus produced in the Mrs. Wheeler, or anything more brilliant than the flashed red and orange of the Lord Byron, it would be impossible to find; while I thought I had never seen a flower of so rare and exquisite a pure yellow as the Golden Dragon. As to size, there was everything, from things as small as a gold button to things almost as big as a Cabbage. And shapes differed as widely. Some were as flat as a plate, some as round as a ball; some as solid as Artichokes, some so fragile they looked as though a breath would blow them apart. There were flowers with large, strong petals, and flowers with delicate, thread-like petals; with short ones and long ones, straight or spirally twisted, curling in or curling out, or lying in a flat row around a solid centre. There were Chrysanthemums like little English Daisies, and like Peonies, and like Sunflowers, and others that one could hardly tell from Dahlias, and others, again, that suggested nothing in the world but Chrysanthemums determined to be as eccentric as they could. It was amusing for a while to try and pick out the most beautiful ones, but the attempt was soon abandoned in despair, for there were so many types one's standard of beauty changed at every step.

Of the three great novelties of the year, Mrs. L. P. Morton may be a great triumph from the cultivator's point of view; but from that of the mere "lover of loveliness," it seemed a failure—not pleasing in its color, which is an impure pink, oddly variegated with a dull white, and in disagreeable contrast with the greenish-yellow centre; and not pleasing in its form either—which resembles that of a half-double Sunflower.

The Mrs. Carnegie, on the other hand, is superb—a perfect expression of the incurved type, neither so full as to be hard nor so loose as to lose form and dignity; variable in its manner of growth, moreover, so that no two blossoms are identical in shape, while all are beautiful; of the most magnificent dark-red shade, and truly wonderful in size. But the most beautiful of all—the most beautiful Chrysanthemum that exists—is the famous Mrs. Alpheus Hardy. Here again is the incurved type, a little fuller than in the Mrs. Carnegie, but not too solid, and not in the least stiff or artificial looking. The color is the most pure and radiant imaginable white, and the singular down on the petals adds much more than one might imagine to their beauty. This down is called "hairs," I believe, by scientific writers, or even "a glandular growth." But it is down to the eye of ignorance, and the petals look like nothing so much as the tufts which grow at the base of the wing of a swan. It has often been said of Chrysanthemums that the best of them lack the indefinable quality we call charm. They are splendid flowers, beautiful flowers, but devoid of sentiment, not charming, not poetical. No one will say this again who has seen the Mrs. Hardy. Just the addition of this downy covering to its pure white petals gives it delicacy, charm and sentiment; makes it as poetical as a Water Lily or a Rose. *George Fleming.*

[Our opinion as to the merit of these novelties has

been already expressed. The flowers of the Mrs. L. P. Morton were cut from the original seedling plant, and the variety promises to be of good form and color. The Mrs. Alpheus Hardy is most interesting as a novelty. Unlike many novelties, too, it has a distinct and genuine beauty. We should hesitate, however, before pronouncing it the most beautiful Chrysanthemum in the world.—ED.]

Paulownia Imperialis.

To the Editor of GARDEN AND FOREST:

Sir.—In 1876 I purchased a strong root of this tree and planted it in good soil with an eastern exposure, quite well protected on the west and north. The object was to confine the annual growth, from year to year, to a single stem. It made a growth of eight feet the first summer, which was cut back nearly to the ground the next spring. As soon as the buds had pushed, all but one were rubbed off. By June 1st this had made a growth of one foot. Afterwards, to ascertain its rate of growth, it was measured on August 5th and again on the 12th. The growth was precisely thirteen inches. September 23d the stem had attained a height of fourteen feet, and measured, at a foot from the ground, three inches in diameter. The massive petioles averaged sixteen inches in length and nearly an inch in diameter. The leaves were about nine inches apart, and the largest measured ten feet three inches across. All of them were nearly as large, except those at or near the top. Those splendid leaves stood many a hard wind without being much torn. The shoot towered up, during the middle and latter part of the season, above the surrounding foliage—a singularly odd and by no means unattractive object. Year after year, either in the spring or fall, this shoot of the preceding season's growth was cut off near the ground. In 1878 it made a growth nearly as great as in 1877, but during every succeeding year the growth was shorter, until, in 1887, the stump put forth a feeble shoot or so, which perished in a few weeks, and the plant was dead.

The above notes may interest those who read Professor Penhallow's remarks respecting the Paulownia in GARDEN AND FOREST of October 17th, page 406: "The Paulownia was planted (Montreal, Canada) in October, 1881. The stems have been killed to the ground each year, but the growth of each season has proved larger than that of the preceding, and this year reached a height of ten feet. The roots, which are quite hardy, appear to be gaining strength each year, and the plant is quite as well established as the one growing in the Botanic Garden at Cambridge."

I fancy, from my own experiment, that the Paulownia will not stand being cut or frozen back many years in succession.

Bergen County, New Jersey. *E. S. Carman.*

Horticultural Exhibitions.

The Short Hills Orchid and Chrysanthemum Show.

THIS exhibition was really the formal opening of the United States Nurseries at Short Hills, New Jersey, and the fact that plants were displayed at home instead of being staged in a public hall, gave it an additional interest to professional visitors. The eighteen houses already built were filled with vigorous plants arranged with much taste and skill. This collection is already remarkable for Cypripediums, of which it includes 360 species and varieties, many of them rare or unique. Masses of *C. insigne*, in its various forms, filled the first house, among them being *C. insigne Chantinii*, superb in shape and color, Philbrick's famous variety, and an extraordinary novelty with a corrugated lip, the upper part of the pouch being fluted in a most interesting way. Next to these were forms of *C. Spicerianum*, of which the variety *nigrescens* is noticeable for the rich dark color of lip and petals. Here, too, were *C. Leeanum*, one of the rarer hybrids, many examples of the beautiful *C. Harrisianum*, *C. leuchorrodium*, *C. Dayanum*, *C. dilectum*, *C. Haynaldianum*, *C. Calunum*, *C. Morganiæ*, *C. Io grandis*, and *C. Arthurianum*.

Near the Cypripediums was the beautiful yellow variety of *Odontoglossum Rossii*, this plant, we believe, being found only in the Short Hills collection. Flowering specimens of *O. crispum Alexandræ*, *Oncidium Crameri*, and the fragrant *Zygopetalum Mackayii* were grouped near each other. Few Lælias were in flower except a very dark form of *L. Autumnalis* and the delicate little *L. Eyermani*, the new hybrid of American origin. *Oncidium splendidum*, somewhat injured by previous exhibitions, was still interesting, since it so rarely blooms. Other well-flowered Oncidiums were *O. ornithorhyncum* and *O. incurvum*. A collection of *Lycaste Skinneri* showed all the varieties from crimson to pure white.

Next in importance to the Orchids were the stove plants, and foremost among these was the great display of Anthuriums. A collection of these plants lately secured from a Swiss grower includes specimens in the flowering section which are unique and as yet unknown to commerce. Crotons, Nepenthes, Dracænas and Ferns fill up other houses, some of the specimen Crotons being unusally fine. The cool houses showed a wonderful array of *Primula obconica*, and there was a houseful of good Cyclamens.

The Chrysanthemums alone would have sufficed to make an exhibition, but the chief attraction was a houseful of the Mrs. Alpheus Hardy, which has been so often described. The flower shows well in a great mass, although its absolute purity of color produces an effect that is almost dazzling, but visitors never seem to tire of admiring it.

Large numbers of professional and amateur horticulturists, some of them from distant states, visited the exhibition during the week, and Messrs. Pitcher & Manda are to be congratulated on the uniform admiration expressed for their establishment and all its appointments.

Autumn Flower Show in New York.

MESSRS. SIEBRECHT & WADLEY have been successful in their venturesome experiment of holding a flower show at this season in which the Chrysanthemum is not the chief attraction. The collection at the Eden Musée consisted mainly of plants used for decoration, and they were grouped with striking originality. The prim little Japanese Garden, with hedges of Arbor Vitæ and graveled walks, beds of Roman Hyacinths, Pansies, Marigolds, Carnations, Stevias, Cylamens and Primulas, interested many visitors. Many neat effects were produced in the recesses along the walls, one nook being filled with well-grown Heaths, another with dwarf Orange trees, some with Orchids, others with stove plants, while Nepenthes and Stag's-horn Ferns were hung about to the best advantage. A splendid specimen of *Livistonia horrida* made a fine background for one of these groups, and other show plants, like the great *Cyathea dealbata* and the wonderful Alsophila, a pair of superb Seaforthias and a fine *Areca lutescens*, were effectively placed amid a bewildering abundance of tropical rarities. Besides the profusion of Orchids and decorative plants, cut Roses of the more fashionable varieties and of exquisite quality were scattered among the Ferns, and in addition to the ever-present and always admired Mrs. Hardy, there were some excellent Chrysanthemums. Mr. John Henderson, Mr. Barr, of Orange, and Wm. Tricker, gardener to Judge Benedict, sent many of the best of these. The flowers of Mrs. Jessie Barr, a white of superb form and substance, Sunset, which is worthy of its name, Gold Lace, an odd laciniated yellow, and Mrs. Munn, a duplication of Mrs. Frank Thompson in creamy white, were the most striking.

The exhibition was well attended, especially by people of fashion. Very rarely has there been collected and displayed in this city so great a variety of choice plants in such excellent condition.

Recent Plant Portraits.

TEA ROSE, COMTE HENRI RIGNON, *Journal des Roses*, September; a handsome, free-flowering hybrid, with pale copper-colored petals, delicately shaded with rose-salmon on the margins.

LÆLIA PURPURATA, *Revue de l'Horticulture Belge*, September.

AZALEA INDICA, MISS E. JARRETT, *Revue de l'Horticulture Belge*, September; a variety raised in the Van Houtte nurseries, with very large single white flowers, faintly tinged with green; evidently a plant of very considerable merit; it received the first prize at the quinquennial exhibition at Ghent in 1883.

PITHECOCTENIUM BUCCINATORIUM, *Bulletino R. Soc. Toscana di Orticultura*, September.

ACALYPHA TRIUMPHANS, *L'Illustration Horticole*, August 31st.

PHALÆNOPSIS SCHILLERIANA, *L'Illustration Horticole*, August 31st.

DENDROBIUM MACROPHYLLUM, *L'Illustration Horticole*, August 31st.

VRIESEA WITTMACKIANA, *Gartenflora*, October 15th; a hybrid between *V. Barilletii* and *V. Moneniana*, these two species appearing also on the plate.

SYRINGA EMODI ROSEA, *Revue Horticole*, November 1st.

Notes.

A feature of the recent Pomological Exhibition in Vienna was a special display of fruits ill adapted to local cultivation, and labeled "warnings."

The death is announced of a famous Dutch horticulturist, Joshua Valk, who for no less than fifty-seven years was connected with the botanical garden in Leyden.

The shipments of Beans from southern California to eastern cities has already reached fifty car-loads. Orders are still coming in, and there is likely to be a brisk movement of the crop eastward for two months to come.

The Marshall Pear is a comparatively new variety, which ripens some ten days later than the Bartlett. Specimens of the fruit received from Mr. P. H. Foster, of Babylon, Long Island, were bell-shaped, of good size, with a smooth, thin skin, which is beautifully russeted. The flesh is white, juicy, and of excellent flavor. The tree is said to be vigorous and productive, and altogether the Pear seems to be a real acquisition.

It appears from a recent issue of the *Southern Lumberman*, published in Nashville, that the soft, spongy wood of the knees, peculiar growths upon the roots of the Southern Cypress (*Taxodium distichum*), is sometimes manufactured into razor-strops, which are pronounced more effective than the leather-covered, stiff strops in general use. It is necessary, however, to keep them protected from dust, which adheres readily to the soft wood, and soon becomes embedded in the grain, ruining it for this purpose.

At the late Chrysanthemum show in Philadelphia, Mr. W. K. Harris exhibited a plant upon which twenty distinct varieties had been grafted and all were in bloom at the same time. This suggests a new line of work, inasmuch as such plants would be objects of great popular interest at exhibitions, if a proper selection and arrangement of colors were made. It may be questioned, however, whether a plant bearing several different kinds of flowers possesses any value except as a curiosity. Whether some varieties of feeble growth would be improved if grafted on a more robust stock can be ascertained by experiment.

A memorial to Alexander Humboldt was recently erected in the so-called Humboldt field, one of the new parks of Berlin. As a statue of the great naturalist already stood in the centre of the town, the new monument was given a very different form. From all parts of the Province of Brandenburg the largest possible erratic stones (glacial boulders) were brought together and arranged in imitation of a terminal moraine. In their vicinity curious stones of many other sorts are grouped, and one bears a simple inscription telling that the "monument" was erected in Humboldt's honor by the city of Berlin. Our correspondent, Dr. Bolle, has long been actively engaged in forwarding this movement.

Mr. C. S. Burt, President of the Bourbon Lumber Company, of Baton Rouge, La., lately informed a correspondent of the *St. Louis Lumberman* that his company are at present dragging, from a swamp to one of their mills, a number of cypress logs felled by General Jackson's army in 1812, and used at the time for closing the Manchac River. Mr. Burt says the bark and sap have rotted off from the logs, but that the heart wood is as good as ever, and the finest quality of lumber is obtained from these logs. The *St. Louis Lumberman* has on exhibition in its office a cypress picket top from Baton Rouge, La., which was exposed to the weather sixty-three years, without showing marked signs of decay.

It has sometimes been stated that the worst monstrosities in the way of formal planting which disfigure some of our western parks—figures of men and animals and even portraits of various celebrities—should be charged to the bad taste not of native American, but of German, gardeners. The statement seems to find some support in the fact that at a horticultural exhibition held not long ago in one of the smaller German towns, a portrait of the Emperor William I., four feet and a half high, was displayed in bright-leaved plants; and in the further fact that none of the parks of our eastern towns, except in Pittsburgh, where German influence is less strongly felt than at the West, are deformed by similar horrors.

The importance attached to landscape gardening enterprises abroad is shown by the fact that when it was proposed last year to alter and enlarge the public park at Lisbon an international competition was opened for the purpose of securing the best possible plan. Large prizes were offered for the three most satisfactory plans, which were to become the property of the municipality. After the jury had made its preliminary selection, twenty-six plans remained in its hands, among which the final choice was made. The first prize was awarded to M. Henri Lusseau, the second to M. Henri Duchêne, and the third to M. Eugène Deny, all being French artists. Two French and one German artist received honorable mention. Moreover, a pamphlet, carefully prepared by a distinguished French expert, was published, in which the nature of the problem and the character of the designs submitted were fully explained by the aid of numerous drawings.

Prince Schwarzenberg, who recently died in Vienna at the age of eighty-nine, was the most conspicuous and influential of the many Austrian noblemen who have concerned themselves with horticulture. He was chiefly instrumental in the establishment of the Imperial Horticultural Society, and its first exhibition—the first flower-show ever opened in Austria—was held in his green-house in the year 1827. Elected the first President of the young society, he held the position until his death, a period of sixty years; and during all this time devoted himself with the greatest energy and amiability to furthering its interests and exciting a love of the gardener's art in his fellow-countrymen at large. His beautiful grounds were freely opened to the public, and special exhibitions were often held in them. The last exhibition he arranged, during the summer of this year, was to display his beautiful collection of Gloxinias, a flower which, according to the testimony of German journals, is not yet as well known in that country as with us.

A recent number of *Gartenflora* reproduces from Professor Schuebler's work on Norwegian trees—"Viridarium Norvegicum, Norges Vaextrige"—an illustration of a curious "Recumbent Birch-tree," which stands, if the word is appropriate, on a mountain side about three miles from Christiania. The trunk is something over six metres in length and thirteen centimetres in diameter a foot above the roots. Upon leaving the ground it bends towards the left, running horizontally for a short distance; then it makes an abrupt reverse turn and runs towards the right close to the surface and partly reclining upon it. Near the elbow thus formed a branch rises erect in the shape of a normally-formed tree, with a tall, slender trunk. Five similar branches succeed this at regular intervals in similar tree-like development, the last forming the turned-up termination of the recumbent trunk. As there is no trace whatever of minor branches, the effect of these six separate trees springing, seemingly, from a dead log, is extremely curious. The first in order is about fifteen feet in height and the others graduate down by regular degrees. The trunk must have been prostrated in very early life, and the branches assumed their singular shape—at once normal and abnormal—through the natural action of what the German paper calls "negative geotropism."

The success and usefulness of the Botanical Garden in Adelaide, Australia, are made very plain in the recently published report of the Director, Dr. Schomburgk. The garden was founded in 1855, and at first included only forty acres, originally an open forest of huge Eucalyptus trees, covered in the rainy season with a thick undergrowth. Fifteen acres were laid out as a little park, with lakes and brooks and a little hall for horticultural exhibitions. Now this park has been enlarged by the addition of forty-eight acres, and the whole garden includes 140 acres. A large palm-house has recently been built; water is abundantly supplied from the town reservoirs; a Museum of Economic Botany has been constructed, and a botanical garden planted. The cost of maintenance is less than £5,000 a year, while the utility of the establishment can hardly be overrated. It supplies a charming place of popular resort in a climate where such a place is especially required; and it has largely served the practical interest of the province by experiments in cultivation and by the distribution of plants and seeds. Vines have been imported from France, and their usefulness in Australia tested; Sorghum has been introduced; Guinea grass (*Panicum giganteum*) has been proved well adapted to local culture, and Ramie or China Grass (*Boehmeria nivea*) has been proved unsuitable. During the special Jubilee Exhibition held last year 12,973 different species of plants were shown; among those in the greenhouses were 180 species of Palms, 396 Orchids and 465 Ferns. The highest temperature recorded in the garden during 1877 was 111.2 degrees Fahrenheit in the shade; and the amount of rainfall was 25.7 inches, a remarkable quantity, for in the previous year only 14.4 inches had been measured.